

REMARKS

This Amendment is filed in response to the Office Action mailed on April 23, 2008. All objections and rejections are respectfully traversed.

Claims 36-54 are currently pending.

REQUEST FOR EXAMINER INTERVIEW

The undersigned Attorney respectfully requests a telephonic interview with the Examiner after the Examiner has had an opportunity to consider this Amendment, but before the issuance of the next Office Action. The Attorney may be reached at 617-951-2500.

REJECTION UNDER 35 U.S.C. §103(a)

At paragraph 1 of the Office Action, claims 36-40 were rejected under 35 U.S.C. §103(a) as being unpatentable over Malveli et al., U.S. Patent Application Publication No. 2004/0151188, published on August 5, 2004, (hereinafter “Malveli”) in view of “A Highly Available Network File Server” (hereinafter “HA-NFS”).

The present invention, as set forth in the representative claim 36 comprises:

36. A method, comprising:

detecting a failure of a primary virtual port on a physical port of a first server, wherein the primary virtual port has an identity;
activating a secondary virtual port on the physical port of the first server, the physical port adapted to support two or more virtual ports that share the physical port;

configuring the secondary virtual port with the identity of the failed primary virtual port; and
servicing one or more storage devices owned by the first server through the secondary virtual port on the first server.

Malveli discloses specifically on page 3 paragraph 28:

[0028] FIG. 6C illustrates a potential failure condition where communication using physical port 1 602 is disrupted. This could be due to a failure of the link to physical port 1 602, failure of the virtualization switch 600 (or physical port 1 602) or other reasons. In this case the virtualization switch 600 has reconfigured so that virtual ports 1 610 and virtual ports 2 612 have been connected logically to physical port 3 606. This would be done by simply changing the middle byte of the Fibre Channel address, as the domain or high byte would remain the same because it would still be the virtualization switch 600. The lower byte or AL_PA or loop address would remain the same, indicating virtual ports 1 and 2 610 and 612. A flow chart of initialization and operation of this movement is shown in FIG. 7. (Emphasis added)

Thus, Malveli discloses a system in which a physical port fails and its associated virtual ports are reconfigured to run on another physical port. Malveli does not disclose a **virtual port failing and activating a secondary virtual port**.

HA-NFS discloses devices owning storage data.

Applicant respectfully urges that neither Malveli nor HA-NFS teach or suggest Applicant's claimed novel *detecting a failure of a primary virtual port on a physical port of a first server, wherein the primary virtual port has an identity...activating a secondary virtual portconfiguring the secondary virtual port with the identity of the failed primary virtual port.*

That is, at no time does Malveli or HA-NFS disclose "*detecting a failure of a primary virtual port ... activating a secondary virtual port... configuring the secondary virtual port with the identity of the failed primary virtual port.*"

Applicant's claimed invention is directed to a method or a system for providing failover for a first virtual port to a second virtual port in a storage network by utilizing

virtual ports rather than physical ports. Specifically, when a device (an adapter) is operating in a “multi-ID” mode, the storage appliance is connected to a switching fabric and therefore may require multiple virtual ports per physical port (see Applicant’s Specification page 15 lines 1-21 for a detailed description of the multi-ID mode). In particular, a virtual port is a functional nonphysical port initiated through virtualization software in a virtual database which defines the virtual port. Thus, instead of each device having two separate physical ports (one primary and one secondary), each device need only have one physical port having a first (primary) virtual port and a second (secondary) virtual port. Said differently, a single physical port may comprise a plurality of virtual ports, which are each dynamically configurable to inherit an identity (e.g., IP address) from a failed virtual port. In particular, Applicant’s invention detects when a first virtual port in a storage network has failed, and initializes a second virtual port to allow access to data that is otherwise inaccessible during failure of the first virtual port. To do this, the system configures the second (e.g., previously inactive/offline) virtual port with the identity of the first (i.e., primary or active) virtual port on the first/failed device, thereby allowing the second device to service a set of disks owned by the first/failed virtual port through the use of the second virtual port.

Conversely, Malveli discloses a failed first physical port which is associated with one or more virtual ports. Malveli reconfigures the virtual ports “so that virtual ports 1 610 and virtual ports 2 612 have been connected logically to physical port 3 606”. That is, the first physical port’s virtual ports are merely reconfigured to be associated with a second physical port. At no time does Malveli disclose Applicant’s “*detecting a failure of a primary virtual port ... activating a secondary virtual port... configuring the secondary virtual port with the identity of the failed primary virtual port.*” Furthermore, HA-NFS merely discloses devices owning storage data.

Accordingly, Applicant respectfully urges that Malveli and HA-NFS, either taken singly or in combination, are legally insufficient to render the presently claimed invention obvious under 35 U.S.C §103(a) because of the absence in each of the cited art of

Applicant's claimed novel *detecting a failure of a primary virtual port on a first physical port of a first server, wherein the primary virtual port has an identity and activating a secondary virtual port ...configuring the secondary virtual port with the identity of the failed primary virtual port.*

All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims.

Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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